

wherein the controller and the DRAM are packaged in a single package.

8. The method of claim 1, wherein the data storage device further comprises dynamic random access memory (DRAM) connected to the controller, and

wherein the controller, the DRAM, and the memory device are packaged in a single package.

9. The method of claim 1, wherein the object-oriented programming language is Java programming language.

10. A method of operating a data processing system which comprises a host and a data storage device, the method comprising:

receiving, by a controller embedded in the data storage device, a first instance in object-oriented programming language in response to a write command from the host;

transforming, by the controller, the first instance into first object data; and

programming, by the controller, the first object data into a memory device embedded in the data storage device.

11. The method of claim 10, further comprising:

reading, by the controller, the first object data from the memory device in response to a read command from the host by the controller;

transforming, by the controller, the first object data into the first instance; and

transmitting, by the controller, the first instance to the host.

12. The method of claim 11, wherein the data storage device is one of a direct attached storage, a data storage for a storage area network, and a network attached storage.

13. The method of claim 11, wherein the controller comprises a first central processing unit (CPU) in communication with the host and a second CPU in control of the memory device, and the second CPU comprises an application programming interface (API) to perform the transforming the first instance into the first object data and the transforming the first object data into the first instance.

14. The method of claim 11, wherein the data processing system further comprises dynamic random access memory (DRAM) connected to the controller, and

wherein the controller, and the DRAM are packaged in a single package.

15. The method of claim 11, wherein the object-oriented programming language is Java programming language.

16. A method of operating a data processing system which comprises a host and a data storage device, the method comprising:

transmitting, by the host, an instance in object-oriented programming language, which is stored in a first memory device of the host, to the data storage device during a write operation; and

programming, by the data storage device, the instance as it is to a second memory device embedded in the data storage device during the write operation.

17. The method of claim 16, further comprising:

reading, by the data storage device, the instance from the second memory device in response to a read command output from the host during a read operation; and

transmitting, by the data storage device, the instance as it is to the host during the read operation.

18. The method of claim 16, further comprising, before the write operation:

transmitting, by the host, a read command to the data storage device;

transmitting, by the data storage device, object data that has been stored in the second memory device to the host in response to the read command; and

transforming, by the host, the object data into the instance and storing the instance in the first memory device.

19. The method of claim 16, wherein the data storage device is one of a direct attached storage, a data storage for a storage area network, and a network attached storage.

20. The method of claim 16, wherein the object-oriented programming language is Java programming language.

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